

## **Amendments to the Claims:**

*This listing of claims will replace all prior versions, and listings, of claims in the application:*

1.-11. (canceled)

12. (currently amended) ~~The system as claimed in claim 1~~

An audio system for use in a vehicle having a roof, the system comprising:  
an acoustically-insulating headliner adapted to be mounted adjacent the roof so  
as to underlie the roof and shield the roof from view, the headliner having an upper surface  
and a sound-radiating, lower surface;

a source of audio signals;

an array of electromagnetic transducer assemblies supported at the upper surface  
of the headliner;

signal processing circuitry coupled to the assemblies for processing the audio  
signals to obtain processed audio signals wherein the assemblies convert the processed audio  
signals into mechanical motion of corresponding zones of the headliner and wherein the  
headliner is made of a material which is sufficiently stiff and low in density so that  
substantially the entire headliner acts as a single headliner speaker diaphragm and radiates  
acoustic power into the interior of the vehicle with a frequency range defined by a lower limit  
of 100 hertz or less and an upper limit of 12 kilohertz or more and the processed audio signals  
at a low end of the frequency range are matched to the processed audio signals at mid and high  
ends of the frequency range and wherein the headliner material has a stiffness between 1E9PA  
and 5E9PA and a density of between 100 and 800 kilograms per meter cubed.

13.-23. (canceled)

24. (currently amended) ~~The system as claimed in claim 1~~

An audio system for use in a vehicle having a roof, the system comprising:

an acoustically-insulating headliner adapted to be mounted adjacent the roof so as to underlie the roof and shield the roof from view, the headliner having an upper surface and a sound-radiating, lower surface;

a source of audio signals;

an array of electromagnetic transducer assemblies supported at the upper surface of the headliner;

signal processing circuitry coupled to the assemblies for processing the audio signals to obtain processed audio signals wherein the assemblies convert the processed audio signals into mechanical motion of corresponding zones of the headliner and wherein the headliner is made of a material which is sufficiently stiff and low in density so that substantially the entire headliner acts as a single headliner speaker diaphragm and radiates acoustic power into the interior of the vehicle with a frequency range defined by a lower limit of 100 hertz or less and an upper limit of 12 kilohertz or more and the processed audio signals at a low end of the frequency range are matched to the processed audio signals at mid and high ends of the frequency range and wherein the headliner material has a stiffness (modulus of elasticity, Youngs modulus) between 1E9 Pa and 5e9 Pa and a density between 100 and 800 Kg/m<sup>3</sup> and wherein the headliner material may be made from single materials or composites.

25.-42. (canceled)

43. (previously presented) An audio system for use in a vehicle having a roof, the system comprising:

an acoustically-insulating headliner adapted to be mounted adjacent the roof so as to underlie the roof and shield the roof from view, the headliner having an upper surface and a sound-radiating, lower surface;

a source of audio signals;

an array of electromagnetic transducer assemblies supported at the upper surface of the headliner;

signal processing circuitry coupled to the assemblies for processing the audio signals to obtain processed audio signals wherein the assemblies convert the processed audio

signals into mechanical motion of corresponding zones of the headliner and wherein the headliner is made of a material which is sufficiently stiff and low in density so that the headliner radiates acoustic power into the interior of the vehicle with a frequency range defined by a lower limit of 100 hertz or less and an upper limit of 12 kilohertz or more and the processed audio signals at a low end of the frequency range are matched to the processed audio signals at mid and high ends of the frequency range and wherein the headliner material has a stiffness between 1E9PA and 5E9PA and a density of between 100 and 800 kilograms per meter cubed.

44. (previously presented) An audio system for use in a vehicle having a roof, the system comprising:

an acoustically-insulating headliner adapted to be mounted adjacent the roof so as to underlie the roof and shield the roof from view, the headliner having an upper surface and a sound-radiating, lower surface;

a source of audio signals;

an array of electromagnetic transducer assemblies supported at the upper surface of the headliner;

signal processing circuitry coupled to the assemblies for processing the audio signals to obtain processed audio signals wherein the assemblies convert the processed audio signals into mechanical motion of corresponding zones of the headliner and wherein the headliner is made of a material which is sufficiently stiff and low in density so that the headliner radiates acoustic power into the interior of the vehicle with a frequency range defined by a lower limit of 100 hertz or less and an upper limit of 12 kilohertz or more and the processed audio signals at a low end of the frequency range are matched to the processed audio signals at mid and high ends of the frequency range and wherein the headliner material has a stiffness (modulus of elasticity, Youngs modulus) between 1E9 Pa and 5e9 Pa and a density between 100 and 800 Kg/m<sup>3</sup> and wherein the headliner material is made from single materials or composites.